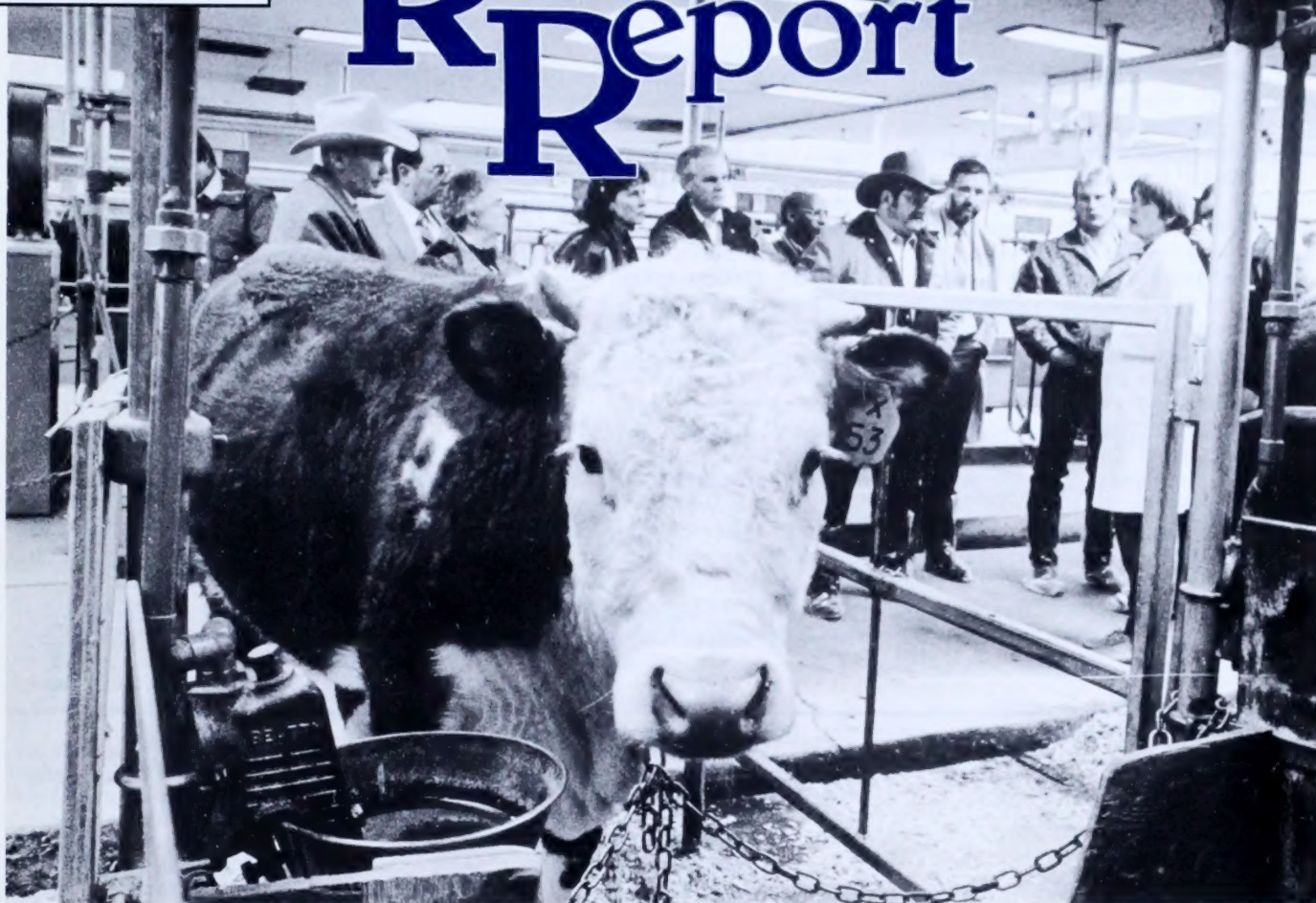


Research Report



Directors of the Alberta Agricultural Research Institute and members of the Farming for the Future Council tour Agriculture Canada's extensive research facilities in Lethbridge.

The Alberta Agricultural Research Institute

Supporting agri-food research to meet the challenges of today and tomorrow

Agriculture in Alberta faces many challenges—balancing costs and benefits, improving production efficiency, conserving precious soil and water resources, competing in a tough marketplace. World-class research is a crucial component in meeting these challenges and that's why the Alberta Agricultural Research Institute (AARI) was created.

The purpose of the Institute is to promote, coordinate, prioritize and support research in agriculture, and to ensure transfer of the resulting knowledge for the benefit of a strong, sustainable agri-food industry. Created in 1987 by the Alberta Legislature, this Crown corporation is helping agricultural research in Alberta to become increasingly successful in meeting the needs of this vital industry.

The Institute carries out its various roles under the guidance of its Board of Directors. The Board is composed of representatives

from private and public agricultural research agencies, the Alberta government and private citizens actively involved in the agri-food industry.

One of the Institute's primary activities is the financial support of agricultural research. It achieves this through its two main funding vehicles: the **Matching Grants Program** and the **Research Coordination Program**. Applications for both programs are reviewed once a year. Proposals are assessed by the Institute's research committees which then forward their expert recommendations to the Board. The Board makes the final decisions on awards. The projects funded over the last two years under these programs are listed in this issue of *Research Report*.

The Matching Grants Program was established to stimulate private sector research funding by offering matching grants, usually on a 50:50 basis. It also provides matching grants for other qualifying agencies. Through

this program, the Institute is directing money to research in five areas: production efficiency, diversification, agricultural processing, marketing and resource conservation—all keys to the future success of Alberta's agri-food industry.

From April 1988 to March 1990, 53 Matching Grants projects were funded with \$1.78 million from the Institute and equal or greater funding from private industry and other public sector agencies. The projects supported over these first two years of the program cover a wide range of subjects.

Agricultural processing studies, for instance, include better ways to extend the shelf life of food, and new uses for familiar food fibres, like rhubarb, in novel food products. Diversification projects involve everything from an innovative technique to produce allergy-free infant formulas, to the use

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of off-grade field peas and canola in swine rations. Some of the marketing studies concern ways to meet changing consumer demands in food products, while others look at improved methods to deliver information to producers. Among the many production efficiency projects are studies to develop more effective vaccines against livestock disease, improved livestock facilities and better strains of canola. Projects in resource conservation focus on such topics as maintaining and enhancing soil fertility and soil moisture.

By working with the agri-food industry through the Matching Grants Program, the Institute ensures that optimal use is made of available research funds and that the projects are concentrated on issues which are top priorities for the industry.

The Research Coordination Program, the first of its kind in Alberta, was created to encourage information exchange between researchers. Researchers must keep up to date on new advances, not only in their own areas of specialization but also in other types of research which could be directly or indirectly related to their areas. This can be a difficult task, but the Research Coordination

Program offers them an opportunity to develop contacts with researchers in other organizations and different disciplines.

During 1988-90, nine projects were awarded a total of \$49,950 under this program. All these projects involve multidisciplinary approaches to important concerns in agriculture, like livestock management, soil and water conservation, and crop production. Project funds are used to assist with the extra costs of travel and communication that foster closer working ties among researchers.

In addition to these two main awards programs, the Institute also has created the **Research Professorships Program**. The objective of this program is to help appropriate institutions to concentrate resources in areas which are important but currently given limited research attention. The program became operational in 1989-90, when the Institute awarded \$80,000 for each of four professorships. (Participating institutions are encouraged to provide or obtain from other sources any additional funds needed for equipment, technical manpower, supplies and other costs.)

Along with providing financial support for research, the Institute also carries out many actions related to research coordina-

tion. It works with other research funding agencies, researchers and members of the agri-food industry to establish research priorities. It seeks out opportunities to work cooperatively with other research funding agencies to ensure that priority research is carried out. It searches for ways to improve and streamline agricultural research funding operations in Alberta. Ultimately, its goal is to make agricultural research in Alberta increasingly efficient and effective.

A major part of the AARI's role in research prioritization and coordination is its ongoing, sector-by-sector review of research. The review procedure is designed to encourage participation by and continuing liaison with the many stakeholders in agricultural research. Research agencies discuss their current activities, and producer groups and private companies identify their research needs and priorities. The AARI uses this information as the solid foundation on which to base its own funding decisions and its recommendations for new directions in agricultural research.

Through well-designed, focused agricultural research, the Alberta Agricultural Research Institute is helping the province's agricultural producers and processors to meet the challenges of today and tomorrow.

ALBERTA AGRICULTURAL RESEARCH INSTITUTE RESEARCH PROJECT SUMMARIES AS OF MARCH 1990

MATCHING GRANTS PROGRAM

PROJECT TITLE AND OBJECTIVE	RESEARCHER/ INSTITUTION/ LOCATION	OTHER SPONSORS	AARI FUNDING	
			1988-89	1989-90
AGRICULTURAL PROCESSING				
Technological Investigations for Development of Whey-Based Beverages • to study the problem of sediment formation in whey-fruit juice products; and to verify the effectiveness of proposed treatments under conditions of UHT processing.	P. Jelen University of Alberta Edmonton	Palm Dairies Limited Wisconsin Milk Marketing Board, Inc.	22,138	26,550
Development of Vegetable Fibres as a Food Ingredient • to develop technologies for the production of food fibres from rhubarb (or similar vegetables); and to investigate their use as an ingredient in food products, especially fabricated foods requiring a fibrous texture.	B. Ooraikul University of Alberta Edmonton	UFL Foods Inc. H.P.S. Investments Ltd.	37,500	33,500
Crystallization Control of Honey Products • to study the effect of temperature at the time of packing, and dextrose/water ratios of the honey on product crystallization.	P. Sporns University of Alberta Edmonton	Alberta Honey Producers Co- operative Limited	14,700	15,700
Optimization of Modified Atmosphere Packaging to Extend the Market Life of Meat and Meat Products • to determine the optimum modified atmosphere for market life extension of a range of meats and meat products prepared as sandwiches; and to determine the microbiological safety of products that have been seeded with pathogenic bacteria and stored under conditions simulating good and abusive storage.	M. Stiles University of Alberta Edmonton	Gainers Inc.	15,000	32,100
Research and Development of UHT Whipping Cream with an Extended Shelf Life • to study the effect of milk quality and selected variables on the physical and chemical characteristics of fresh cream and storage stability of UHT whipping cream.	L. Ozimek University of Alberta Edmonton	Palm Dairies Limited	13,500	13,200

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PROJECT TITLE AND OBJECTIVE	RESEARCHER/ INSTITUTION/ LOCATION	OTHER SPONSORS	FUNDING	
			1988-89	1989-90
Improving Meat Quality through Pre-Slaughter Electrolyte Control in Pigs • to examine the efficiency of a new slow release magnesium supplement in reducing pale-soft-exudative (PSE) pork in halothane-positive pigs.	A. Schaefer Agriculture Canada Lacombe	Verla Pharm Company	2,000	in progress
Optimization of Chilling Systems for Red Meat Carcasses • to complete the construction of a research blast-chill unit for chilling red meat carcasses at temperatures between 0° and -40° C; and to determine the effects of very low chilling temperatures on product yields, quality, sensory value and processing attributes in beef and pork.	S. Morgan-Jones Agriculture Canada Lacombe	Energy, Mines, Resources Canada Alberta Cattle Commission	75,000	completed
Quality and Stability of Snack Foods Fried in Canola Oil Products • to evaluate and compare the odor/flavour, appearance, texture, and storage stability of snack foods deep fried in canola oil, canola liquid shortening and commonly used vegetable (soybean, cottonseed) oils.	Z. Hawrysh University of Alberta Edmonton	Canola Council of Canada		16,180
Optimization of Post-Mortem Technology for Quality Assurance in the Processing of Beef • to develop a quality assurance program for the post-mortem treatment of beef by investigating several factors which affect its palatability.	S. Morgan-Jones Agriculture Canada Lacombe	Alberta Cattle Commission		18,000
The Enhancement of Marbling Fat to Meet Japanese Specifications for High Quality Beef • to develop a strategy that will help Alberta farmers to produce the highly marbled beef needed to meet Japanese import specifications.	S. Morgan-Jones Agriculture Canada Lacombe	Canada Packers Inc.		32,800
The Effect of Porcine Somatotropin on Processing Technology and Animal Welfare • to examine the effect of recombinant DNA-produced somatotropin (rPST) on processing yield and quality in bacon and ham products; and to examine whether rPST-treated pigs display any aberrant or stereotype behaviors.	S. Morgan-Jones Agriculture Canada Lacombe	Monsanto Canada Inc.		40,368
DIVERSIFICATION				
Ensiling of Rumen Contents and Whole Blood Using Cereal Straw, Cereal Grain and Bacterial Inoculant • to compare the ensiling quality of mixtures of paunch residue and whole blood mixed with ground cereal straw or cracked barley grain; and to evaluate the efficacy of a lactobacillus inoculant in improving fermentation quality of the waste mixtures.	R. Grimson Lakeside Farm Industries Brooks	Lakeside Farm Industries	8,000	in progress
Technological, Biochemical and Nutritional Aspects of Production of Allergy-Free Infant Formulae Based on Cow's Milk • to apply recent technological processes to produce allergy-free infant formulae based on cow's milk.	L. Ozimek University of Alberta Edmonton	Alberta Dairymen's Association	19,760	21,840
Combination of Canola Meal and Field Peas for Use in Rations for Market Pigs • to explore the complementarity of cull or off-grade field peas and canola meal when used as protein supplements in pig rations; and to compare their efficacies with both low and high protein barley.	J. Bell University of Saskatchewan Saskatoon	Canola Council of Canada	18,910	final report pending
High Quality Semidwarf Winter Wheats for Southwest Alberta • to identify hard red winter wheats that are high yielding, hardy, stiff-strawed and high quality.	J. Thomas Agriculture Canada Lethbridge	Alberta Winter Wheat Association Beswick Farms	3,250	3,500
Oilseed Diversification by Metabolic Engineering of Canola • to isolate genes and regulatory elements which cause lipid body proteins to be produced in canola seed, and to use the knowledge gained in the development of new industrial products from currently grown oilseeds.	M. Moloney University of Calgary Calgary	Sanofi Elf Bio Recherches/King Argo		30,000

PROJECT TITLE AND OBJECTIVE	RESEARCHER/ INSTITUTION/ LOCATION	OTHER SPONSORS	AARI FUNDING	
			1988-89	1989-90
MARKETING				
Delivery of Extension Services to Alberta Hog Producers • to assess the informational needs of Alberta hog producers; and to examine the delivery of extension services to hog producers by the Alberta Pork Producers Development Corporation, private industry, the University of Alberta and government.	M. Hawkins University of Alberta Edmonton	Alberta Pork Producers Development Corporation	11,000	final report pending
Monitoring of On-Farm Voltage Disturbances • to define the nature and extent of on-farm power supply disturbances in Alberta.	J. Leonard University of Alberta Edmonton	Canadian Electrical Association	18,110	completed
Effects of Variety, Location and Season on Quality, Uniformity and Marketability of Oats Grown in Alberta • to study the effects of location, season and variety on quality, uniformity and marketability of oats grown in six diverse agro-climatic regions of Alberta; and to propose new breeding and selection methods for oat quality improvement.	S. Kibite Agriculture Canada Lacombe	The Quaker Oats Company of Canada Limited	9,400	9,400
Development of a Modular Hay Handling System for Double Compressed Forage for Export • to design, build and test a system for double compressing alfalfa bales to allow high density storage and fast economic handling.	K. Ward Olds Forage Centre Olds	Olds Ag-Tech Industries Ltd.		28,300
PRODUCTION EFFICIENCY				
Spread and Survival of Toadflax Growing on Cropped or Fallow Land • to determine seed production per shoot of toadflax; and to study seed dormancy and viability of toadflax plants.	J. King University of Alberta Edmonton	Western Grains Research Foundation	24,550	24,950
Understanding and Alleviating Green Seeds in Spring Canola • to assess the impact of frost and freezing tolerance on the degreening process during seed maturation in <i>Brassica napus</i> and <i>B. campestris</i> .	A. Johnson-Flanagan University of Alberta Edmonton	Western Grains Research Foundation	15,000	15,000
Evaluation of the Safety and Efficacy of an Experimental <i>Mycoplasma Bovis</i> Vaccine • to conduct a trial to determine the efficacy of an experimental <i>Mycoplasma bovis</i> vaccine; and, upon collection of epidemiologic information regarding <i>M. bovis</i> infection, to identify the factors which may predispose animals to the disease or are associated with the disease.	G. Jim Feedlot Health Management Services Okotoks	Langford Inc. Thiessen Farms Ltd.	15,850	final report pending
Evaluating Air Exchange Rate, Misting and Litter Condition on Heavy Turkey Performance • to measure the change in particle concentration and mean particle size for misted and non-misted environments; and to assess turkey health relative to two levels of dust concentration.	J. Feddes University of Alberta Edmonton	Alberta Turkey Growers Marketing Board	5,870	final report pending
Epidemiological Investigation of the Pattern of Shipping Fever within Sale, Transport and Feedlot Groups • to describe how the pattern of shipping fever is influenced by auction market, transportation and feedlot pen conditions; to determine if shipping fever is communicable from calf to calf within transport trucks, or within large pens at the feedlot; and to develop clinical trial designs which will help to improve future commercial efficacy tests of shipping fever vaccines and other preventive measures.	C. Ribble Western College of Veterinary Medicine Saskatoon	Agriculture Canada Ontario Cattlemen's Association	6,515	5,500
Decreasing Embryo Mortality by Dietary Supplementation of an Essential Fatty Acid in Early Gestation • to determine the influence of graded levels of linoleic acid in gestation and lactation diets on: embryonic mortality, immunoglobulin levels in the sow and piglet blood and in the sow's colostrum and milk, litter size at farrowing and the development of the immune function in the young pig.	F. Aherne University of Alberta Edmonton	Alberta Pork Producers Marketing Board	11,000	completed

PROJECT TITLE AND OBJECTIVE	RESEARCHER/ INSTITUTION/ LOCATION	OTHER SPONSORS	AARI FUNDING	
			1988-89	1989-90
Influence of Bovine Somatotropin Injection on Nutritional Requirements, Metabolic Responses, Milk Quality and Reproduction in Dairy Cows <ul style="list-style-type: none"> to determine the influence of long-term bovine somatotropin (BST) injection on nutritional requirements of dairy cattle, milk yield and composition, biological efficiency of milk production, reproductive performance and the productive life of dairy cows. 	J. Kennelly University of Alberta Edmonton	Cyanamid Canada Inc.	71,000	71,000
Development, Enhancement and Evaluation of Alberta Protein Sources for Cattle <ul style="list-style-type: none"> to develop and enhance various protein sources; and to evaluate the resulting protein sources and other protein sources which are currently underused. 	J. Kennelly University of Alberta Edmonton	American Cyanamid Company Canola Council of Canada The Flax Council of Canada Imperial Oil Limited	80,000	80,000
Effect of Ammoniation on Barley Preservation and Feeding Value <ul style="list-style-type: none"> to determine if damp (20% moisture) barley can be successfully preserved with ammonia; and to determine if ammoniated barley (20% and 30% moisture) is superior to dry grain in diets for feedlot cattle. 	G. Mathison University of Alberta Edmonton	Sherritt Gordon Limited	23,400	completed
Dietary Protein and Reproductive Fitness in Male Broiler Breeders <ul style="list-style-type: none"> to demonstrate the effect of reduced dietary intake of protein on male broiler breeders; and to determine a physiological explanation for the relationship between dietary intake of protein and energy and fertility. 	F. Robinson University of Alberta Edmonton	Indian River International	3,918	final report pending
Research and Development of Specific Tests to Detect Leptospirosis Infection in Livestock <ul style="list-style-type: none"> to assess possible improvements to the enzyme-linked immunosorbent assay (ELISA) in the detection of leptospirosis by testing antigens from different serovars. 	C. Darcel University of Lethbridge Lethbridge	Palliser Animal Health Laboratories Ltd.	17,750	in progress
Clinical Field Trial to Evaluate the Efficiency of Preimmunizing Calves with a Commercial <i>Pasteurella</i> Vaccine <ul style="list-style-type: none"> to determine the efficacy of the <i>Pasteurella haemolytica</i> vaccine Presponse in reducing disease and death due to bovine respiratory disease (BRD) in ranch and auction market cattle. 	B. Thorlakson Animal Research Airdrie	Langford Inc. Animal Research International	26,928	completed
Nutritional, Physiological and Microbial Factors that Contribute to Productive Efficiency in Dairy Cows <ul style="list-style-type: none"> to determine the microbial and physiological basis for individual differences in feed utilization between high- and low-producing dairy cows; and to determine the feeding value of various alternative feedstuffs that have potential to enhance milk production level and efficiency, milk composition and rumen characteristics in high-producing dairy cows. 	L. Rode Agriculture Canada Lethbridge	Alberta Milk Producers' Association Ltd. Alberta Cattle Commission	30,000	30,000
New Tools to Reduce the Risk of Shipping Fever <ul style="list-style-type: none"> to develop improved methods of predicting which cows are susceptible to bovine respiratory disease (BRD) so that preventive measures can be targeted to high risk groups; to detect clinically ill calves so treatment can be started; and to predict the outcome of disease so managers can decide whether treatment is worthwhile. 	M. Campos Veterinary Infectious Disease Organization Saskatoon	Alberta Cattle Commission	33,361	33,361
Development of a Vaccine for Colisepticemia in Turkeys <ul style="list-style-type: none"> to identify the strain of <i>Escherichia coli</i> causing the respiratory disease colisepticemia and to genetically alter these bacteria to produce a vaccine which can be delivered to turkeys in their drinking water. 	A. Potter Veterinary Infectious Disease Organization Saskatoon	Saskatchewan Turkey Producers Marketing Board Veterinary Infectious Disease Organization	36,200	36,200

PROJECT TITLE AND OBJECTIVE	RESEARCHER/ INSTITUTION/ LOCATION	OTHER SPONSORS	AARI FUNDING	
			1988-89	1989-90
Genetic Improvement of Canola through Biotechnology: A Somaclonal Variation Approach • to develop an efficient protoplast system for producing somaclonal variants; and to produce, via somaclonal variation, new canola varieties with desirable traits including altered seed fatty acid composition, low glucosinolate content, early maturity, blackleg resistance and shattering tolerance.	W. Scowcroft Biotechnica Canada Inc. Calgary	Biotechnica Canada Inc.	75,000	36,700
Evaluation of a New Electrolyte Solution for Use in Milk-Fed Diarrheic Calves • to develop a new oral electrolyte solution to be used in the treatment of calf scours.	J. Naylor Western College of Veterinary Medicine Saskatoon	Langford Inc. Biostar Inc.	6,000	final report pending
New Concepts in Feeding Growing-Finishing Pigs • to test if pigs will voluntarily vary protein intake independently of energy intake, and to test the new Feed Intake Recording Equipment (FIRE) which allows recording the feed intake of each pig in a group of 10 to 15 pigs.	F. Aherne University of Alberta Edmonton	Pig Improvement Canada Ltd. Heartland Lysine, Inc. Alberta Pork Producers Development Corporation		48,155
Biological Evaluation of Full-Fat Oilseeds (Canola, Flax) as High Energy, Protein and Omega-3 Fatty Acid Ingredients in Poultry Feeds • to screen and assess the nutritional values of dietary Omega-3 fatty acid rich feed ingredients including full-fat canola, flax and soybean seeds; to study eggs and egg products thus enriched with Omega-3 fatty acids for their potential to reduce cholesterol in humans; and to develop practical least-cost feed formulae for poultry with full-fat oilseeds.	J. Sim University of Alberta Edmonton	The Ontario Egg Producers' Marketing Board The Flax Council of Canada		16,500
Effect of a Spray and Burn System on Aspen Forest in West Central Alberta • to evaluate a spray, burn and graze system for the development of pastureland from aspen forest in the luviosolic soil area of West Central Alberta; and to compare the productivity of forages in four treatments over two years.	A. Bailey University of Alberta Edmonton	P. & E. Ranch Ltd.		10,000
Improving Reproductive Efficiency in Broiler Breeder Hens • to gain knowledge of how the normal reproductive system of the broiler breeder hen is disrupted by obesity, aging, and environmental factors such as water quality; and to determine the effects of feed restriction during various growth stages.	F. Robinson University of Alberta Edmonton	Indian River International new-life feeds Lilydale Co-operative Limited		21,000
Control of <i>Listeria monocytogenes</i> in Raw Milk • to determine the origin of the potential disease causing organism <i>Listeria monocytogenes</i> in raw milk; and to determine which sources act as the reservoir for contamination of the bulk tank milk.	H. Jackson University of Alberta Edmonton	Alberta Milk Producers' Society Palm Dairies Limited		7,000
Heat Resistance of <i>Listeria monocytogenes</i> • to determine the factors related to increased heat resistance of <i>L. monocytogenes</i> which in turn allows some of these bacteria to survive normal pasteurization procedures.	H. Jackson University of Alberta Edmonton	Palm Dairies Limited		7,000
Intake of Lasalocid-Containing Mineral Supplements by Grazing Cattle • to determine the inter-animal and intra-animal variability in the consumption of salt-mineral mixtures and forage by grazing cattle in order to provide better formulations to improve performance and reduce cost.	L. Rode Agriculture Canada Lethbridge	Hoffman-La Roche Limited		15,000
A Comparison of High-Energy and High-Protein Creep Feeds for Nursing Beef Calves • to determine the potential benefits of feeding calves high-energy or high-protein supplements that vary in protein degradability.	D. Bailey Agriculture Canada Lethbridge	Canola Crushers of Western Canada Canadian Feed Industry Association, Alberta Division		7,500

PROJECT TITLE AND OBJECTIVE	RESEARCHER/ INSTITUTION/ LOCATION	OTHER SPONSORS	AARI FUNDING	
			1988-89	1989-90
Disease Elimination by Tissue Culture and Testing of Potato Breeding Clones <ul style="list-style-type: none"> to ensure that clones received from breeding programs in the United States are disease free; and to develop a source of disease tested seed tubers of these clones for evaluation in the Prairie regional trial system of adaptation trials and eventually by the industry. 	D. Lynch Agriculture Canada Lethbridge	Alberta Potato Marketing Board Saskatchewan Agriculture and Food		20,000
Genetic Manipulation of Cellulolytic Rumen Microorganisms to Improve Low Quality Feed Digestion in Ruminants <ul style="list-style-type: none"> to identify and enhance species of rumen fungi most active in cellulose digestion in a wide variety of ruminant animals maintained on low quality feeds, and to use the most active ones to feed to newborn ruminants to improve their capacity to utilize low cost and low quality forage. 	K. Cheng Agriculture Canada Lethbridge	National Biotechnology Strategy Fund		45,000
RESOURCE CONSERVATION				
Metering and Placement of Urea Super Granules <ul style="list-style-type: none"> to conduct studies on transport, metering and placement of urea super granules; and to compare nitrogen uptake from urea super granules with uptake from granular urea in yield scale trials. 	K. Domier University of Alberta Edmonton	Norsk Hydro	8,200	completed
Determination of the Optimum Seedbed Conditions for Flax and Canola <ul style="list-style-type: none"> to study the requirements for producing an optimum seedbed for flax and canola; and to investigate the relationship between the moisture gradient in the soil and seeding depth. 	K. Domier University of Alberta Edmonton	The Flax Council of Canada Canola Council of Canada Alberta Canola Producers Association	23,700	25,000
Survival of and Contribution to Crop Growth by a Penicillium Species Introduced into the Rhizosphere of Barley under Field and Lab Conditions <ul style="list-style-type: none"> to refine cultural and microscopic techniques to increase scientific knowledge about plant-microbe interactions in the rhizosphere. 	W. McGill Agriculture Canada Edmonton	Elanco Philom Bios	15,226	2,700
Development of an Alfalfa Inoculant for Improved Nodulation and Nitrogen Fixation at Low Soil Temperatures <ul style="list-style-type: none"> to select strains of <i>Rhizobium meliloti</i> and develop <i>Rhizobium</i> delivery systems capable of improved nodulation and nitrogen fixation at low soil temperatures. 	W. Rice Agriculture Canada Beaverlodge	Philom Bios	28,450	62,500
Influence of Climatic Factors on Forage and Crop Production at Sites in East Central Alberta <ul style="list-style-type: none"> to measure precipitation, evaporation, soil moisture and temperature; and to monitor the influence of these factors on forage and crop production. 	D. Westerlund Chinook Applied Research Association Oyen	Chinook Applied Research Association Atmospheric Environment Service	5,845	4,832
Evaluation of Coated Urea and Development of New Efficient Time-Released N Materials <ul style="list-style-type: none"> to investigate if crop nitrogen (N) uptake efficiency can be improved by coating conventional N fertilizer granules with new time-released materials; and to study if the amount of crop-available N derived from soil for spring-sown crops is greater if the release of available N from the soil is suppressed during the previous fall and winter. 	M. Nyborg University of Alberta Edmonton	Esso Chemicals		7,700

RESEARCH COORDINATION PROGRAM

PROJECT TITLE AND OBJECTIVE	RESEARCHER/ INSTITUTION/ LOCATION	AARI FUNDING	
		1988-89	1989-90
AGRICULTURAL PROCESSING			
Interagency, Interdisciplinary Research to Extend Chilled Storage Life of Meat, Poultry and Processed Products • to launch a concerted, comprehensive, interagency, interdisciplinary research effort on extending refrigerated storage life so that lower cost sea transport can be used by Alberta and Saskatchewan food processors to help their competitiveness in exporting chilled meat products to remote markets.	L. Jeremiah Agriculture Canada Lacombe		5,500
DIVERSIFICATION			
Deer Farming Management Practices and Effects of Various Production Parameters • to collect information concerning red deer farming; and to transfer this information to researchers in Western Canada.	J. Haigh Western College of Veterinary Medicine Saskatoon	4,900	completed
The Future of Prairie Agriculture • to look at the future of Western Canadian agriculture and to coordinate appropriate research and development programs on topics such as markets, production systems, communities and climate.	P. Martin University of Alberta Edmonton		5,000
PRODUCTION EFFICIENCY			
Coordination of Research on the Spider Syndrome in Suffolk Sheep in Alberta • to promote the exchange of information and coordination of research on the spider lamb syndrome in Alberta.	B. Matejka Alberta Sheep Breeders Association Calgary	4,500	final report pending
Proposed All-Alberta Applied Statistics and Biometrics Workshop • to compile a mailing list of statisticians and biometricians working in Alberta; and to organize a workshop for these specialists.	L. Florence Alberta Environmental Centre Vegreville		5,000
Coordination of Mastitis Research in Agriculture Canada (Lethbridge) and the University of Calgary • to coordinate studies on the causes of mastitis at the University of Calgary with dairy herd studies at the Agriculture Canada Research Station in Lethbridge and the results of field studies throughout southern Alberta.	K. Cheng Agriculture Canada Lethbridge		3,600
Crop Molecular Biology and Biotechnology in Alberta: A Workshop to Review and Plan Brassica Research • to bring together Alberta researchers working on crop molecular biology and biotechnology, especially in relation to oilseeds, to discuss research objectives and the techniques utilized to meet these objectives.	A. Johnson-Flanagan University of Alberta Edmonton		5,000
RESOURCE CONSERVATION			
Coordination of Soil and Water Engineering Research in Alberta • to coordinate the research activities at the University of Alberta and Agriculture Canada in the study of optimum seedbed conditions for cereals, oilseeds and special crops, methods of seeding and fertilizer application, soil compaction, and soil and water conservation.	K. Domier University of Alberta Edmonton	3,000	5,000
Soil Fauna and Structural Development under Different Tillage and Cropping Systems in the Peace River Region • to integrate farmers' experiences with research results and to promote interactions between university staff, producers and scientists concerning tillage and cropping systems in the Peace River region.	M. Arshad Agriculture Canada Beaverlodge	3,950	4,500

**For computer access to more information on projects supported by the
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